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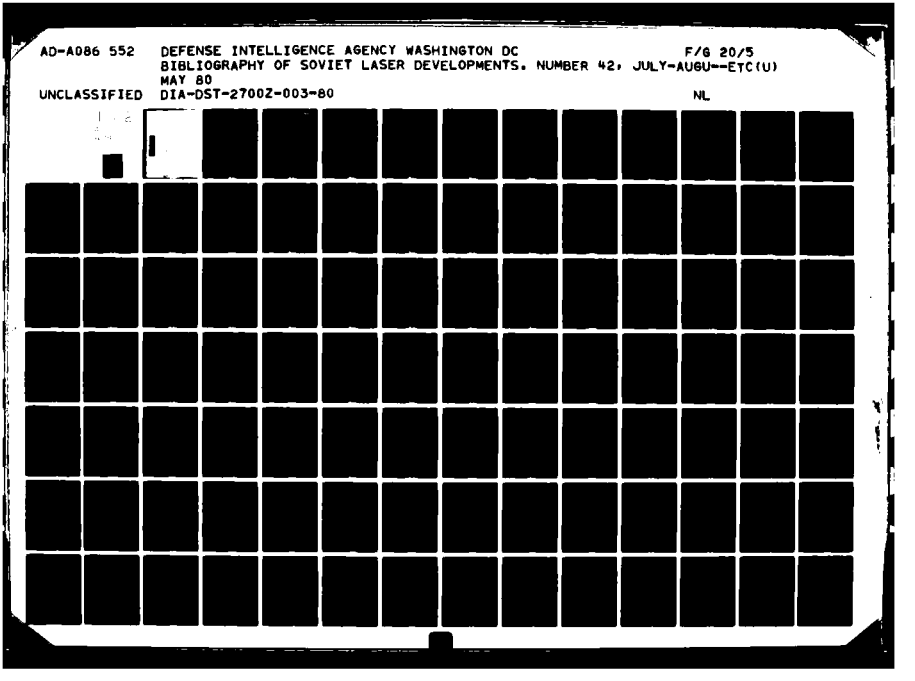

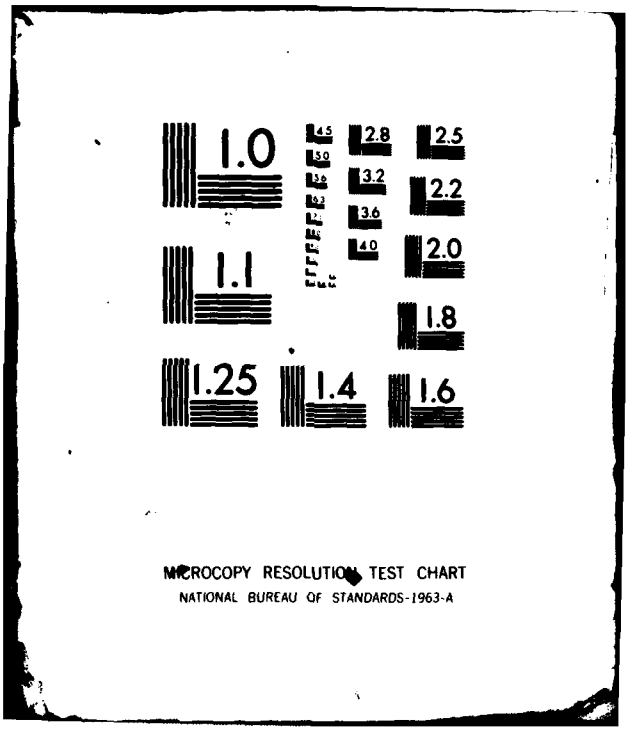
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BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS

No. 42

JULY - AUGUST 1979

Date of Report

February 27, 1980

Vice Director for Foreign Intelligence
Defense Intelligence Agency

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20. ABSTRACT

This is the Soviet Laser Bibliography for July-August 1979 and is no. 42 in a continuing series on Soviet Laser developments. The coverage includes basic research on solid state, liquid, gas, and chemical lasers; components; nonlinear optics; spectroscopy of laser materials; ultrashort pulse generation; and general laser theory. Laser applications are listed under biological effects; communications; beam propagation; computer technology; holography; laser-induced chemical reactions; measurement of laser parameters; laser measurement applications; laser-excited optical effects; laser spectroscopy; beam-target interaction; and plasma generation and diagnostics.

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Introduction

This bibliography has been compiled under an interagency agreement as a continuing effort to document current Soviet-bloc developments in the quantum electronics field. The period covered is July-August 1979, and includes all significant laser-related articles received by us in that interval. The bulk of the entries come from the approximately 30 periodicals which are known to publish the most significant findings in Soviet laser technology. Citations from the Russian Reference Journals are included, as well as entries from the CIRC data base not otherwise covered. Laser items from the popular or semipopular press are generally omitted.

For conveneience we have abbreviated frequently cited source names; a source abbreviations list and an author index are included. All sources cited with no parenthetical notation are available at the Library of Congress. A parenthetical entry (RZh, KL) indicates the secondary source in which the citation was found as a bibliographic entry or abstract, but for which the original source is not currently available at the Library. The authors' affiliations are indicated by the numbers in parentheses following the authors' names in the text and are listed in the Author Affiliations List. New affiliations are assigned a new number and are added to a cumulative list which includes all affiliations from 1969 to the present. Only those affiliations which appear in this issue are listed in this issue's Author Affiliations List.

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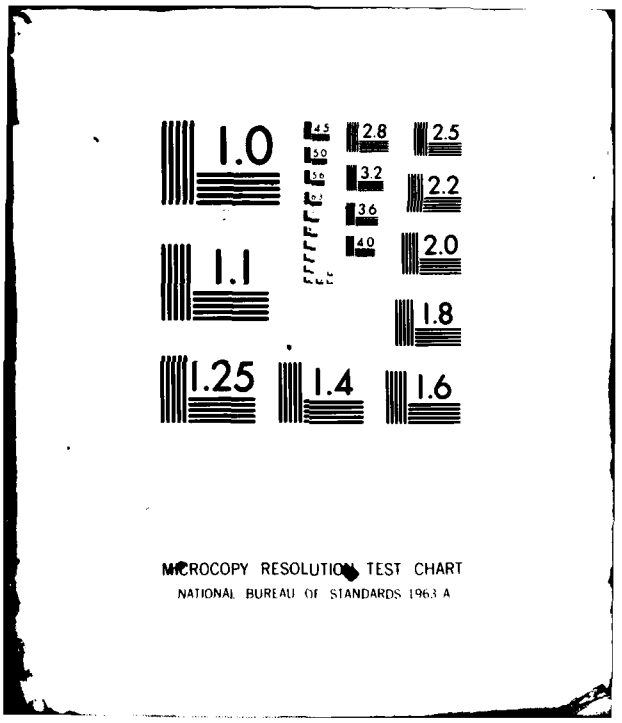
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IV. SOURCE ABBREVIATIONS

	(CIRC Codens)	
BAPS	(BAPTA)	Bulletin de l'Academie Polonaise des Sciences. Serie des Sciences Techniques
DAN Az	(DAZRA)	Akademiya nauk Azerbaydzhanskoy SSR. Doklady
DAN B	(DBLRA)	Akademiya nauk Belorusskoy SSR. Doklady
DAN SSSR	(DANKA)	Akademiya nauk SSSR. Doklady
DBAN	(CRABA)	Bulgarska akademiya na naukite. Doklady
El Tech	(ETNTA)	Electron Technology [Poland]
EOM	(EOBMA)	Elektronnaya obrabotka materialov
FAiO	(IFAOA)	Akademiya nauk SSSR. Izvestiya. Fizika atmosfery i okeana
FGiV	(FGVZA)	Fizika goreniya i vzryva
FiKhOM	(FKOMA)	Fizika i khimiya obrabotka materialov
FTP	(FTPPA)	Fizika i tekhnika poluprovodnikov
FTT	(FTVTA)	Fizika tverdogo tela
IAN Arm	(IAAFA)	Akademiya nauk Armyanskoy SSR. Izvestiya. Fizika
IAN B	(VABFA)	Akademiya nauk Belorusskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk
IAN Fiz	(IANFA)	Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya
IAN Khim	(IASKA)	Akademiya nauk SSSR. Izvestiya. Seriya khimicheskaya
IAN Lat	(LZFTA)	Akademiya nauk Latviyskoy SSR. Izvestiya
ISOAN	(IZSTA)	Akademiya nauk SSSR. Sibirskoye otdeleniye. Izvestiya
IT	(IZTEA)	Izmeritel'naya tekhnika
IVUZ Fiz	(IVUFA)	Izvestiya vysshikh uchebnykh zavedeniy. Fizika
IVUZ Priboro	(IVUBA)	Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye
IVUZ Radiofiz	(IVYRA)	Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika
KE	(KVEKA)	Kvantovaya elektronika

KhVE	(KHVKA)	Khimiya vysokikh energiy
KL	(KNLTA)	Knizhnaya letopis'
KLDV	(KLDVA)	Knizhnaya letopis'. Dopolnitel'nyy vypusk
Kristal	(KRISA)	Kristallografiya
KSpF	(KRSFA)	Kratkiye soobshcheniya po fizike
NM	(IVNMA)	Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy
OiS	(OPSPA)	Optika i spektroskopiya
OMP	(OPMPA)	Optiko-mekhanicheskaya promyshlennost'
Otkr izobr	(OIPOV)	Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki
Opt app	(OPAPB)	Optica applicata [Poland]
PTE	(PRTEA)	Pribory i tekhnika eksperimenta
RiE	(RAELA)	Radiotekhnika i elektronika
RRP	(RRPQA)	Revue roumaine de physique
RZhF	(RZFZA)	Referativnyy zhurnal. Fizika
RZhGeofiz	(GZGFA)	Referativnyy zhurnal. Geofizika
RZhMekh	(RZMKA)	Referativnyy zhurnal. Mekhanika
RZhRadiot	(RZRAB)	Referativnyy zhurnal. Radiotekhnika
Sb1	Sbornik	Statisticheskiye metody obrabotki rezul'tatov nablyudeniy pri kontrole kachestva i nadezhnosti mashin i priborov. Leningr d, 1979.
Sb2		Gologaficheskiye izmeritel'nyye sistemy, no. 2, Novosibirsk, 1978.
Sb3		Novyye razrabotki v oblasti opticheskoy golografii i ikh promyshlennoye ispol'zovaniye. Materialy seminara. Leningrad, 1979.
Sb4		Neodnorodnyye i primesnyye poluprovodniki vo vneshnykh polyakh. Kishinev, 1979.
Sb5		Fotoelektronnoyye pribory dlya issledovaniy bystroprotekayushchikh protsessov. Moskva, 1979.
Sb6		Rasprostraneniye opticheskikh voln v sluchaynoneodnorodnoy atmosfere. Novosibirsk, 1979.

Sb7		Teplo- i massoperenos: protsessy i apparaty. Minsk, 1978.
Sb8		Fundamental'nyye osnovy opticheskoy pamyati i sredy, no. 10, Kiyev, 1979.
Sb9		Fizicheskiye struktury i svoystva tverdykh tel, no. 2, Kyubyshev, 1977.
Sb10		Rabochiye etalony i obraztsovyye sredstva izmereniy v energeticheskoy fotometrii lazernogo izlucheniya. Moskva, 1978.
Sb11		Diagnostika nizkotemperaturnoy plazmy. Moskva, 1979.
Sb12		Gazotermodinamicheskiye mnogofaznyye potokov v energoustanovkakh, no. 1, Khar'kov, 1978.
Sb13		Turbulentnyye dvukhfaznyye techeniya. Vsesoyuznoye nauchnoye soveshcheniye po teoreticheskim i prikladnym aspektam turbulentnykh techeniy. 3rd. Materialy. Part 2. Tallin, 1979.
Sb14		Vsesoyuznaya konferentsiya po teploobmenu i gidravlicheskomu soprotivleniyu pri dvizhenii dvukhfaznogo potoka v elementakh energeticheskikh mashin i apparatov. 6th. 1978. Tezisy dokladov i soobshcheniya. Sect 2. Leningrad, 1978.
Sb15		Kipeniye i kondensatsiya, no. 2, Riga, 1978.
Sb16		Zashchita mornykh beregov. Gidravlicheskiye zony morya. Moskva, 1979.
Sb17		Fizicheskaya elektronika, no. 17, 1978.
Sb18		Dostizheniya spektroskopii. S"yed po spektroskopii. 18th, Gor'kiy, 1977. Part 2. Moskva, 1978.
Sb19		Fiziko-khimicheskiye metody analiza, no. 3, Gor'kiy, 1978.
Sb20		Struktura i svoystva polimernykh materialov. Riga, 1979.
Sb21		Fizicheskaya elektronika, no. 17, 1978.
Sb22		Vsesoyuznaya konferentsiya po fizike nizkotemperaturnoy plazmy. 5th. Tezisy dokladov, Part 2, Kiyev, 1979.
TKiT	(TKTEA)	Tekhnika kino i televedeniya
Tr1	Trudy	Leningradskiy elektrotekhnicheskiy institut. Izvestiya, no. 236, 1978.
Tr2		Khar'kovskiy universitet. Vestnik, no. 180, 1979.
Tr3		Moskovskiy energeticheskiy institut. Trudy, no. 376, 1978.

Tr4		Azerbaydzhanskiy universitet. Uchenyye zapiski. Seriya fiziko-matematicheskikh nauk, no. 6, 1978.
Tr5		Moskovskiy energeticheskiy institut. Trudy, no. 366, 1978.
Tr6		Tsentral'naya aerologicheskaya observatoriya. Trudy, no. 138, 1979.
Tr7		Kiyevskiy politekhnicheskiy institut. Vestnik, Radioelektronika, no. 6, 1979.
Tr8		Trudy metrologicheskikh institutov SSSR. VNII metrologii, no. 226(286), 1977.
TVT	(TVTYA)	Teplofizika vysokikh temperatur
UAM	(-----)	Uniwersytet Adama Mickiewicza, Poznan. Seria fizyka
UFZh	(UFIZA)	Ukrainskiy fizicheskiy zhurnal
ZhETF	(ZEIFA)	Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhETF P	(ZFPRA)	Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhNiPFiK	(ZNPFA)	Zhurnal nauchnoy i prikladnoy fotografii i kinematografii
ZhPMTF	(ZPMFA)	Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki
ZhPS	(ZPSBA)	Zhurnal prikladnoy spektroskopii
ZhTF	(ZTEFA)	Zhurnal tekhnicheskoy fiziki
ZhTF P	(PZTFD)	Pis'ma v Zhurnal tekhnicheskoy fiziki
ZhVMMF	(ZVMFA)	Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki

V. AUTHOR AFFILIATIONS

NS. Non-Soviet
0. Affiliation not given
1. Physics Institute imeni Lebedev, AN SSSR (Fizicheskiy institut imeni Lebedeva AN SSSR).
2. Moscow State University (Moskovskiy gosudarstvennyy universitet).
3. Institute of Physics, AN BSSR (Institut fiziki AN BSSR).
4. Physicotechnical Institute im Ioffe, Leningrad (Fiziko-tekhnicheskiy institut im Ioffe).
5. Institute of Physics, AN UkrSSR (Institut fiziki AN UkrSSR).
6. Institute of Semiconductors, AN UkrSSR (Institut poluprovodnikov AN UkrSSR).
7. State Optical Institute im Vavilov, Leningrad (Gosudarstvennyy opticheskiy institut im Vavilova).
12. Leningrad State University (Leningradskiy GU).
13. Institute of Crystallography, AN SSSR (Institut kristallografiya AN SSSR).
15. Institute of Radio Engineering and Electronics, AN SSSR (Institut radiotekhniki i elektroniki AN SSSR).
16. Moscow Engineering Physics Institute (Moskovskiy inzhenerno-fizicheskiy institut).
19. Moscow Power Engineering Institute (Moskovskiy energeticheskiy institut).
21. Acoustics Institute, AN SSSR (Akusticheskiy institut AN SSSR).
23. Institute of Atomic Energy im Kurchatov, Moscow (Institut atomnoy energii im Kurchatova).
29. Leningrad Polytechnic Institute (Leningradskiy politekhnicheskiy institut).
30. Leningrad Institute of Precision Mechanics and Optics (Leningradskiy institut tochnoy mekhaniki i optiki).
32. Physics Scientific Research Institute at Leningrad State University (Fizicheskiy NII pri Leningradskom GU).
34. Khar'kov State University (Khar'kovskiy GU).
36. Physicotechnical Institute of Low Temperatures, AN UkrSSR (Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR).
37. Yerevan State University (Yerevanskiy GU).
38. Kazan' Physicotechnical Institute (Kazanskiy fiziko-tekhnicheskiy institut).
39. Institute of Cybernetics, AN GruzSSR (Institut kibernetiki AN GruzSSR).
45. Saratov State University (Saratovskiy GU).
49. Vilnius State University (Vil'nyusskiy GU).
50. Institute of Semiconductor Physics, AN LitSSR (Institut fiziki poluprovodnikov AN LitSSR).
51. Kiev State University (Kiyevskiy GU).
59. Institute of Physics Research AN ArmSSR (Institut fizicheskikh issledovaniy AN ArmSSR).
64. Institut of Atmospheric Physics, AN SSSR (Institut fiziki atmosfery AN SSSR).
65. Institute of Problems of Physics, AN SSSR (Institut fizicheskikh problem AN SSSR).
67. Institute of Physics of Chemistry, AN SSSR (Institut khimicheskoy fiziki AN SSSR).
69. Institute of Oceanography, AN SSSR (Institut okeanologii AN SSSR).
71. Institute of Applied Mathematics, AN SSSR (Institut prikladnoy matematiki AN SSSR).

74. Institute of High Temperatures, AN SSSR (Institut vysokikh temperatur AN SSSR).
75. Institute of Automation and Electronic Measurements, Siberian Branch, AN SSSR (Institut avtomatiki i elektrometrii SOAN).
78. Institute of Atmospheric Optics, Siberian Branch AN SSSR (Institut optiki atmosfery SOAN).
82. Physicotechnical Institute, AN UkrSSR (Fiziko-tekhnicheskiy institut AN UkrSSR).
84. Institute of Radiophysics and Electronics, AN Ukr SSR (Institut radiofiziki i elektroniki AN UkrSSR).
86. Azerbaydzhan State University (Azerbaydzhanskiy GU).
87. Belorussian State University (Belorusskiy GU).
90. Electrotechnical Institute of Communications (Elektrotekhnicheskiy institut svyazi).
94. Gor'kiy State University (Gor'kovskiy GU).
98. Institute of Nuclear Physics at Moscow State University (Institut yadernoy fiziki pri Moskovskom GU).
99. Institute of Mechanics and Physics, Saratov (Institut mekhaniki i fiziki).
106. Kiev Polytechnic Institute (Kiyevskiy politekhnicheskiy institut).
110. Leningrad Electrotechnical Institut (Leningradskiy elektrotekhnicheskiy institut).
113. Leningrad Mechanical Institute (Leningradskiy mekhanicheskiy institut).
115. L'vov Polytechnic Institute (L'vovskiy politekhnicheskiy institut).
117. Moscow Mining Institute (Moskovskiy gornyy institut).
119. Moscow Institute of Electronic Engineering (Moskovskiy institut elektronnoy tekhniki).
120. Moscow Institute of Engineers of Geodesy, Aerial Photography and Cartography (Moskovskiy institut inzhenerov geodezii, aerofotos"yemki i kartografii).
122. Scientific Research Institute of Physicochemistry im Karpov (NI fiziko-khimicheskiy institut im Karpova).
134. Central Aerological Observatory (Tsentral'naya aerologicheskaya observatoriya).
136. Uzhgorod State University (Uzhgorodskiy GU).
137. Voronezh State University (Voronezhskiy GU).
138. Voronezh Polytechnic Institute (Voronezhskiy politekhnicheskiy institut).
140. All Union Scientific Research Institute of Physicotechnical and Radiotechnical Measurements (VNII fiziko-tekhnicheskikh i radio-tekhnicheskikh izmereniy).
141. All Union Scientific Research Institute of Opticophysical Measurements (VNII optiko-fizicheskikh izmereniy).
144. All Union Scientific Research Institute of Television and Radio Broadcasting (VNII televideniya i radioveshchaniya).
159. Institute of Thermophysics, Siberian Branch, AN SSSR (Institut teplofiziki SOAN).
161 Moscow Institute of Radio Engineering, Electronics and Automation (Moskovskiy institut radiotekhniki, elektroniki i avtomatiki).
163. All Union Scientific Research Institute of Metrology im Mendeleyev (VNII metrologii im Mendeleyeva).
168. Institute of Electric Welding im Paton, AN UkrSSR (Institut elektrosvarki im Patona AN UkrSSR).
210. Institute of Physics, Siberian Branch, AN SSSR (Institut fiziki SOAN).
224. Yerevan Polytechnic Institute (Yerevanskiy politekhnicheskiy institut).
231. Scientific Research Institute of Motion Pictures and Photography (NI kinofotoinstitut).

276. Institute of Physics of the Earth im Shmidt, AN SSSR (Institut fiziki Zemli im Shmidta AN SSSR).
282. Scientific Research Institute of Physics, Odessa (NII fiziki, Odessa).
287. Institute of Physical Chemistry, AN SSSR (Institut fizicheskoy khimii AN SSSR).
295. Institute of Chemical Kinetics and Combustion, Siberian Branch, AN SSSR (Institut khimecheskoy kinetiki i goreniya SOAN).
325. Scientific Research Institute of Physics, Rostov-on-Don (NII fiziki, Rostov-na-Donu).
326. Institut of Radioelectronics, AN SSSR (Institut radioelektroniki AN SSSR).
362. Leningrad Pedagogical Institute (Leningradskiy pedagogicheskiy institut).
363. Kiev State Pedagogical Institute (Kiyevskiy gos pedagogicheskiy institut).
387. Institute of Geology of Ore Deposits, Petrography, Mineralogy and Geochemistry, AN SSSR (Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR).
395. Scientific Research Institut of Introscopy (NII introskopii).
396. "Optika" Special Design Bureau for Scientific Instrument Manufacture, Siberian Branch, AN SSSR (Spetsial'noye konstruktorskoye byuro nauchnogo priborostroyeniya "Optika" SOAN).
424. Voroshilovgrad Mechanical Engineering Institute (Voroshilovgradskiy mashinostroitel'nyy institut).
426. Institute of Applied Physics, AN SSSR, Gor'kiy (Institut prikladnoy fiziki AN SSSR).
444. Institute of Nuclear Physics, AN KazSSR (Institut yadernoy fiziki AN KazSSR).
445. All Union Scientific Research Institute of the Metrological Service, Moscow (VNII metrologicheskoy sluzhby).
466. Institute of High-Current Electronics, Siberian Branch, AN SSSR (Institut sil'notochnoy elektroniki SOAN).
483. Scientific Research Institute of Chemistry at Gor'kiy State University (NII khimii pri Gor'kovskom GU).
490. Institute of Physics, AN GruzSSR (Institut fiziki AN GruzSSR).
494. Vladimir Polytechnic Institute (Vladimirskiy politekhnicheskiy institut).
499. Armenian State Pedagogical Institute (Armyanskiy gos pedagogicheskiy institut).
500. Institute of Structural Mechanics and Seismic Stability, AN Gruz SSR (Institut stroitel'noy mekhaniki i seysmostoykosti AN GruzSSR).
501. Yaroslavl Polytechnic Institute (Yaroslavskiy politekhnicheskiy institut).
503. Mining Institute of the Kola Branch, AN SSSR (Gornyy institut Kol'skogo filiala AN SSSR).

VI. AUTHOR INDEX